



Building people power for climate & energy justice

Arguments for the Urgent Need to Reduce Greenhouse Gas Emissions

*Excerpt from the Emergency Complaint filed with NC Attorney General Roy Cooper Calling for Investigation of the Operations and Practices of Duke Energy**

October 7, 2015

This complaint has been designated an EMERGENCY COMPLAINT because of the immediate need for Duke Energy to significantly reduce its carbon and greenhouse gas emissions in light of the severity of the climate crisis. Duke Energy claims to be the largest utility in the world and, at the same time, it is the largest emitter of carbon dioxide and other greenhouse gases of any electric utility in the United States.¹ A change in its charter to restrict Duke Energy's use of coal in its production of electricity will have a major positive impact on North Carolina, and without exaggeration, the world's future.

Abrupt Sea Level Rise and Superstorms

Four years ago, leading scientists began calling global climate change a planetary emergency as the devastation of many global communities continued to accelerate. In 2015, one of the world's leading teams of climate scientists now warns that unless dramatic reductions in pollution begin immediately, world sea levels could rise 10 feet in the next 50 years due to the melting and breaking off of ice sheets in Antarctica and Greenland, and that a newly discovered feedback caused by the ice sheet demise – the pooling of cold meltwater that disrupts natural ocean currents – is likely to fuel an alarming increase in the intensity and frequency of various types of storms. According to the team's study:

We conclude that multi-meter sea-level rise would become practically unavoidable. Social disruption and economic consequences of such large sea-level rise could be devastating. It is not difficult to imagine that conflicts arising from forced migrations and economic collapse might make the planet ungovernable, threatening the fabric of civilization.²

If these warnings are even close to being on target, coastal areas around the world could become uninhabitable long before 10 feet of sea level rise occurs. As hurricane winds and storm surges grow stronger, coastal cities and villages could be flooded and destroyed. Impacts that are already harming North Carolina could grow exponentially worse in the very near future.

* Full complaint filed by NC WARN and allies is available at <http://www.ncwarn.org/wp-content/uploads/Complaint-FINAL-Merged-PDF.pdf>.

Beyond sea level rise, the climate crisis is evidenced by an increasingly hot planet. The year 2014 was the hottest year on record in terms of average global temperatures, and the first half of 2015 is, by far, the hottest on record according to the National Oceanic and Atmospheric Administration.³ Nine of the hottest 10 years globally have been recorded since the turn of the century. Heat waves, droughts and other weather extremes are breaking records in the US and many other parts of the world while devastating people, wildlife and property. As the western US is running out of water for drinking and crops, it is also suffering its worst wildfire season, with some blazes exceeding the capacity to extinguish them despite unprecedented help by the US military and ally nations. By late August, officials had predicted some fires in the Northwest will last until the snow season.⁴

The people least responsible for carbon pollution are suffering the most from its disruptive effects. Many communities worldwide have become increasingly distressed as fundamental goods and services are no longer readily available. But that injustice will ultimately be overtaken by the reality that no one can escape from weather extremes or disruption of our food and water supplies, along with other critical social systems. Researchers at a major national laboratory recently projected that the rate of climate change will accelerate even more rapidly after 2020 regardless of short-term efforts to reduce carbon.⁵ Global health leaders warn that with current warming trends, humanity is facing “very serious and potentially catastrophic effects for human health and human survival [that require] action now – and action in the next 10 years – otherwise the game could be over.”⁶

Although traditionally hesitant to link global warming with particular weather events, climatologists now argue that warming air, land and oceans are making natural weather extremes worse. For example, warmer air and bodies of water create more energy for hurricanes and torrential rainfalls, even as other areas experience record-breaking drought and famine. An August 2015 study by Columbia University researchers concludes that the ongoing and historic California drought is being worsened by global warming because warmer air dries out plants and soil more quickly, thus feeding the historic wildfires plaguing much of western North America.⁷

Multiple observational studies of wildlife show severe stress to plants and animals caused by climate change and other environmental assaults. A study in *The Anthropocene Review* found that, even in the early stages of climate change, “species extinctions and other changes are far more advanced.”⁸ A July 2015 study published in *Science* found that our oceans and marine life are destined to be “irreversibly changed” unless large carbon emission cuts begin immediately.⁹ James Barry of the Monterey Bay Aquarium Research Institute in California observed, “I used to think it was kind of hard to make things in the ocean go extinct. But this change we're seeing is happening so fast it's almost instantaneous.”

There is strong scientific consensus that burning of fossil fuels is the primary cause of climate disruption. In the US, there has been broad acceptance that the biggest contributor is coal burned to generate electricity, but the rapid shift to electricity from burning natural gas could make the climate problem even worse due to leakage of methane – a very potent greenhouse gas – during the mining and distribution process.¹⁰ Well measured scientific and common sense observations of our overheating planet and disrupted natural systems have, in recent years, led climate scientists to insist that only dramatic reductions in carbon emissions can avert the worst scenarios of widespread climate catastrophe. Some climatologists have concluded that global warming, sea level rise and wildlife die-offs have already become unstoppable and will continue to accelerate. Others argue there is still a very small window of time to avoid this apocalyptic prospect.¹¹

Because carbon lasts for decades in the oceans and atmosphere, pollution already released will continue causing damage to our environment, economies and social structures for decades even if emissions were curtailed immediately. This period will fully test humanity’s ability to learn to cooperate and adapt. But unless dramatic pollution reductions begin immediately, planetary heating, with its multi-

faceted damage, will move forward under its own momentum due to a variety of feedback processes already underway. This will create widespread chaos and threaten humanity's very existence.

North Carolina on the Front Line

Most of the physical and economic impacts described above are already harming North Carolina and are destined to get worse; how much worse and how quickly remain central questions. Ignoring the increasingly negative impacts will not make them go away; we cannot simply push them onto our children and grandchildren. North Carolina needs to heighten its preparation for changes along with efforts to curb emissions.

Residents of eastern North Carolina have borne the effects of increased hurricanes, tornadoes and winter storms since the 1990s and remain keenly aware of this state's geography bulging eastward into the Atlantic, along with the potential for a Sandy-like "superstorm." North Carolina's famous tourism industry is dancing a tightrope already, as spring tides and winter storms increasingly disrupt NC Highway 12 and the ferry system, and as natural coastal erosion is amplified. At any time, a major hurricane could render the barrier islands a memory.

North Carolina has seen so many droughts since the late 1990s, weather forecasters now treat it as an expected condition. The agriculture community is already seeing big changes and is preparing for the future via a new program, NC ADAPT:

We're already having to begin adapting to changes ... to cope with increasingly intense storms and downpours ... That's why we [formed NC ADAPT] to share our experiences and develop solutions to increasingly erratic and unpredictable weather... [W]hat has served us well as ... risk-management tools are quickly becoming irrelevant given the changing climatic conditions.¹²

When they do occur, rainfalls tend to be torrential.¹³ Higher intensity storm cells spawning thunderstorms, straight-line winds and tornadoes have raked the state in recent years.

Findings by the Risky Business Project, co-chaired by unlikely allies Michael Bloomberg and Henry Paulson, reported this year that North Carolina is one of the states most vulnerable to climate change. The assessment concluded that about 30 percent of the North Carolina workforce is employed in a sector at risk from climate change; heat and precipitation changes could reduce statewide agricultural yields for crops such as corn by 21% by the 2030s; coastal storm damage could exceed \$1.3 billion annually by mid-century; and, by 2030, up to \$4.4 billion in coastal property is likely to be flooded at high tide.¹⁴

Cooperation of Nations is Failing

Leading climate scientists now argue that the international target for carbon reductions intended to hold global temperature rise to 2 degrees Celsius is wholly inadequate and, therefore, that even if a binding international agreement were reached after many years of failed efforts and in the face of vigorous opposition by entrenched fossil fuel corporations, that target would ensure unstoppable climate catastrophe.¹⁵ Similar concerns surround the recent Clean Power Plan announced by the Obama administration. While a step in the right direction, it falls far short of what the science demands and already seems destined for years of battle before it could ever be implemented.

Though many world leaders are neutralized by corporate polluters, a number of nations and US states are moving forward. North Carolina must take responsibility for decarbonizing this state. That means asserting our sovereign control over Duke Energy. While NC WARN and allies strongly prefer to

find a cooperative approach with Duke Energy – one we have publicly and privately sought over a number of years – we can await that cooperation no longer.

Former CEO Jim Rogers told stockholders in 2013 that Duke Energy is the largest corporate utility in the world, a claim confirmed in early 2014 by the *Raleigh News & Observer*. Duke Energy is headquartered in Charlotte, so it is the duty of North Carolinians to require Duke Energy to begin the rapid decarbonizing of its electricity generation. Due to Duke Energy's size, even an announcement that it plans to decarbonize could cause a positive trend globally to avert runaway climate disruption.

The objective of North Carolina becoming proactive about climate change is not going to be achieved by replacing coal plants with natural gas plants. New fracking gas plants are even worse than coal for the climate crisis over the next crucial decades because of the well-documented leakage of methane during the mining and distribution of natural gas.¹⁶ While Duke Energy executives would like to pretend that methane leakage doesn't count as they boast about emissions reductions, the corporation's plan to put North Carolina's energy future in the hands of natural gas is completely misguided.

National governments and industry heads have repeatedly failed to rise to the challenge demanded by climate change. At this unprecedented moment in history, we are calling on Attorney General Cooper to provide the leadership needed that just might turn the tide in favor of stabilizing our climate in time to avert widespread catastrophe.

¹ M.J. Bradley and Associates, *Benchmarking Air Emissions of the 100 Largest Electric Power Producers in the United States*, July 2015: <http://www.nrdc.org/air/pollution/benchmarking/files/benchmarking-2015.pdf>

² James Hansen et al. "Ice melt, sea level rise and superstorms: evidence from paleoclimate data, climate modeling, and modern observations that 2°C global warming is highly dangerous," July 23, 2015: <http://www.atmos-chem-phys-discuss.net/15/20059/2015/acpd-15-20059-2015.pdf>

Title page and abstract of the study have been attached as **Appendix B**.

³ *Truthout*, "The new climate 'normal': Abrupt sea level rise and predictions of civilization collapse," August 3, 2015: <http://www.truth-out.org/news/item/32131-the-new-climate-normal-abrupt-sea-level-rise-and-predictions-of-civilization-collapse>
Full study by National Oceanic and Atmospheric Administration, *Global Analysis*, June 2015: <https://www.ncdc.noaa.gov/sotc/global/201506>

⁴ *NPR*, "Western wildfires outpace weary firefighting crews," August 30, 2015: <http://www.npr.org/2015/08/30/436013183/western-wildfires-outpace-weary-firefighting-crews>.

⁵ *Climate Progress*, "Rate of climate change to soar by 2020s, with Arctic warming 1°F per decade," March 10, 2015: <http://thinkprogress.org/climate/2015/03/10/3631632/climate-change-rate/>

⁶ Statement attributed to Anthony Costellos, Director of the University College of London's Institute of Global Health. *Truthout*, "The new climate 'normal': Abrupt sea level rise and predictions of civilization collapse," August 3, 2015: <http://www.truth-out.org/news/item/32131-the-new-climate-normal-abrupt-sea-level-rise-and-predictions-of-civilization-collapse>

⁷ A. Park Williams et al., "Contribution of anthropogenic warming to California drought during 2012-2014," August 31, 2015: <http://onlinelibrary.wiley.com/doi/10.1002/2015GL064924/full>

⁸ *The Anthropocene Review*, "Colonization of the Americas, 'Little Ice Age' climate, and bomb-produced carbon: Their role in defining the Anthropocene," May 29, 2015: <http://anr.sagepub.com/content/2/2/117.abstract>

⁹ *Science*, "Sea-level rise due to polar ice-sheet mass loss during past warm periods," July 10, 2015: <http://www.sciencemag.org/content/349/6244/aaa4019>

¹⁰ Robert W. Howarth, Cornell University, *A Bridge to Nowhere: Methane Emissions and the Greenhouse Gas Footprint of Natural Gas*, April 22, 2014: http://www.eeb.cornell.edu/howarth/publications/Howarth_2014_ESE_methane_emissions.pdf

¹¹ American Meteorological Society, *State of the Climate in 2014*, July 2015: <http://ametsoc.org/SOC-2014.pdf>

¹² *The News & Observer*, "How NC farming, forestry sectors are adapting to changing climate," August 10, 2015: <http://www.newsobserver.com/opinion/op-ed/article30635676.html>.

¹³ WRAL TV news reported on September 1, 2015, that 78% of summer rainfall had occurred in a 10-day period.

¹⁴ The Risky Business Project, *Come Heat or High Water: Climate Risk in the Southeastern US and Texas*, July 2015: <http://riskybusiness.org/uploads/files/Climate-Risk-in-Southeast-and-Texas.pdf>

¹⁵ *The Washington Post*, "The world's most famous climate scientist just outlined an alarming scenario for our planet's future," July 20, 2015: <http://www.washingtonpost.com/news/energy-environment/wp/2015/07/20/the-worlds-most-famous-climate-scientist-just-outlined-an-alarming-scenario-for-our-planets-future/>

¹⁶ Robert W. Howarth, Cornell University, *A Bridge to Nowhere: Methane Emissions and the Greenhouse Gas Footprint of Natural Gas*, April 22, 2014: http://www.eeb.cornell.edu/howarth/publications/Howarth_2014_ESE_methane_emissions.pdf